

**PARENTAL NEEDS OF TRANSITION OF CHILDREN USING COCHLEAR IMPLANTS  
FROM PRESCHOOL TO INCLUSIVE SCHOOL**

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*The families of children with hearing impairments are more focused on early detection and intervention. Transition to school is a stressful experience to the parents as they miss out on understanding the importance of transition process and the information required for a successful, efficient and effective transition to school. The current study was aimed to evaluate the needs of parents on transition of their children with hearing impairment from preschool to inclusive school. Thirty five mothers of children with hearing impairment using cochlear implants in the range of 4-6 years participated in the study. Scale of parental needs in transition to school (Kargin, Baydik & Akçamete, 2004) was modified, adapted and administered on the mothers. Percentage analysis indicated that 75% of parents expressed need for information on most of the areas of transition to school. Correlation between groups was found to be significant with respect to educational status, age of the mothers and socio economic status of the families. Parents are the most influential yet significantly underrated factors in children's education and hence their information needs should be determined for successful transition process.*

Globally there are over 250 million persons with hearing impairment of whom 2/3<sup>rd</sup> are in developing countries. In India there are over 3.1 million persons afflicted with moderate, severe and above severe hearing impairment in both the ears (NSSO, 2002). The census of India (2001) reports that 1.62 million persons have hearing loss of which 2% are children below the age of 3 years. Hearing impairment in children does not only make it difficult for them to communicate with other people; it also slows down, or even prevents learning hence, they need special help to learn. This special help will come from schooling; but parents, siblings, family members and the community also needs to help (Messaria, 2002). The families of children with hearing impairments are more focused on early detection, intervention, cochlear implantation (CI), therapy and so on. With appropriate amplification and early intervention, children with hearing loss can be mainstreamed in regular elementary and secondary education classrooms (Joint Committee on Infant Hearing, 2000).

Joining an elementary school is a major life transition for children and their families (Docket & Perry, 2001). The start of primary schooling has been perceived as one of the most important transitions in a child's life and a major challenge of early childhood. Initial success at school both socially and intellectually, lead to a virtuous cycle of achievement (Burrell & Bubb, 2000) and can be a critical factor in determining children's adjustment to the demands of the school environment and future progress (Ghaye & Pascal, 1989). Children and families respond differently to the transition to elementary school. For some it is a smooth process, while for others it is a nightmare - a string of stressful experiences. When transition to elementary school for a normal child is a stressful experience to the parents, it's even more challenging for parents of children with hearing impairment using cochlear implants, as most of these parents miss out in understanding the importance of transition process and the information required for a successful, efficient and effective transition process.

Research on parents' needs in the transition process reveal that parents have a desire to participate in the transition process and may require the support of specialists during the process (Hanline & Halvorsen, 1989). The families may reduce their level of anxiety and stress during the transition period by preparing for transition (Spiegel-McGill, Reed & Mc Gowan, 1990; Fowler, Schwartz & Atwater, 1991). Research on the effects of parental involvement has shown a consistent, positive relationship between parents' engagement in their children's education and student outcomes. Hoover-Dempsey and Sandler (1997) stated that parental involvement includes participation in home-based activities (e.g., helping with homework, discussing school events or courses) and school-based activities (e.g., volunteering at school, coming to school events).

Cochlear implantation (CI) has become an increasingly common habilitation option for children who are hearing impaired (Marschark & Spencer, 2003). An increasing body of research demonstrates improvements in children's functioning after cochlear implantation in particular their spoken language and their ability to communicate (Bat-Chava, Martin & Kosciw, 2005; Geers, Nicholas & Sedey, 2004; Svirsky, Robbins, Kirk, Pisoni & Miyamoto, 2000). However, successful outcomes following cochlear implantation are neither conclusively assured nor immediate (Geers et al., 2004) and significant variability in children's outcomes following cochlear implantation has been reported (Bat-Chava et al., 2005; Sach & Whynes, 2005; Spencer, 2004; Marschark & Spencer, 2003; Svirsky et al., 2000). It has been suggested that the role of parents throughout the habilitation process is one among the many factors responsible for enhancing the benefits of CI and eventually the child's progress (Allegretti, 2002; Geers & Brenner, 2003; Spencer, 2004). Desjardin, Eisenberg and Hodapp (2006) suggested that parental involvement and self efficacy are two family factors that account for the variance in children's communication development following cochlear implantation. Cochlear implantation accompanied by aural (re)habilitation increases access to acoustic information of spoken language, leading to higher rates of mainstream placement in schools and lower dependence on special education support services (Francis, Koch, Wyatt & Niparko, 1999).

Transition of child with a hearing impairment from pre-school to school is something that still bothers their parents. Hanline(1988) in his study on parents whose children have completed the transition process from preschool to special classes in public school had found that the parents needed information about the relevant services, placement procedures, individualized education plan (IEP) development, written information about the available kindergartens in their neighborhood and also a specialist who could provide the above information for their children with special needs. Meeting the various needs of parents in the transition period plays an important role in the successful transition process of the children.

Spencer (2004) examined different behavioral indicators of parental involvement related to their children's education and development both before and after cochlear implantation and indicated an association between high levels of parental involvement like learning sign language, advocating for their child's needs, devoting time and effort to take their child to the CI clinic for follow up and monitoring children's language achievement. Desjardin (2004) found that mothers higher sense of involvement was associated with mothers enhanced language facilitation strategies and their children's improvement in language abilities. Active participation of parents can be provided by preparing transition plans while taking into consideration the parents individual needs about the transition process (Spiegel-Mc.Gill et al., 1990). Equipping parents with the necessary knowledge and skills determined by their special needs enables the families to experience less stress during the transition period (Hanline & Halverson, 1989; Fowler et al, 1991).

During pre-school to inclusive school transition, parents can be prepared by providing information about the period and available support services. For many parents, the period of transition to a new school starts with the evaluation of the skills of their children. For this reason parents should first be given information about the evaluation process and the interpretation of the results. Parents may experience less anxiety when they are given information about the activities to prepare children for their kindergarten (Bagley, 1995). Other school or program choices available for the children, their legal rights in the transition period (Rous, Hemmeter & Schuster, 1994), developmental characteristics of preschoolers (Waxler, Thomson, & Poblete, 1990), their children's needs, roles of educators and parents in this process (Pianta & Kreft-Sayre, 1999), kindergarten curriculum and time table, kindergarten rules and expectations (Meier & Schafran, 1999) are among the other topics of information to be provided to the families.

Parents of children with cochlear implants are keen for their children to succeed in school, but some of them find it difficult themselves to access the school. This difficulty may arise because of their work hours which prevent them from getting to the school during the day, or they live some distance from the school and do not have transport or time to travel to school on a regular basis, or were not able to help children with homework and many other reasons. It cannot be assumed that these people have no interest in the school or in supporting their children as they start school (Perry & Dockett, 2001). Research has shown that student and family characteristics affect levels of parental involvement. Working-class families and families in which mothers work full-time tend to be less involved in their children's education. The family is one of the most influential forces in human life. How we educate, nurture, guide and support parents of children with hearing impairment will significantly have an impact upon the development of that child (Epstein, 1995).

There are not enough sources and studies conducted, especially in Indian context which can help the parents prepare their children with cochlear implants to start schooling and learn about some of the issues that they need to consider in the first years of the school. Thus, the importance of getting the necessary information that assists the parents in an easy transition of their child with cochlear implants to the inclusive school is ignored. Therefore, studies focusing on parental needs during transition to schooling are the need of present research which will help us to get an insight about the expectations, doubts and aspirations of parents and guide them for smooth transition to an inclusive school. The aim of the study was to determine the requirements of the parents having children with cochlear implants in transition to Inclusive school. The study also aimed to determine whether such factors as mothers' age, educational status and socioeconomic status of the family had a significant impact on those needs during the transition of their child from pre-school to inclusive school.

## **Method**

### *Participants*

In this cross-sectional study, mothers of thirty five children with hearing impairment using cochlear implants were involved and selected using simple random sample selection method from auditory verbal therapy centres located in twin cities of Secunderabad and Hyderabad, Andhra Pradesh, India. The age of the mothers ranged between 19 years to 35 years with a mean age of 24.5yrs. Their education level was from 10<sup>th</sup> standard to graduation and above, all the mothers were housewives and their families' socio economic status was Rs.6500/- and above per month as shown in table 1. The age range of the children with hearing impairment varied from 4-6 years and they had just completed their pre-school / auditory verbal therapy program and were about to join regular school. All the children have profound sensory neural hearing loss as certified by a qualified Audiologist. All the thirty five children had an auditory experience for about 2-3 years.

**Table 1: Demographic Data of Mothers**

Variables	Group	Category	Number
Age of the mother	CI (35)	25 yrs & younger	12
		26 - 30yrs	10
		31 - 35yrs	13
Education status of mother	CI	< graduation	12
		> graduation	23
Occupation of mothers	CI	Housewives	35
		<6500	18
Socio economic status	CI	>6500	17

### *Selection Procedure*

Mothers were selected using simple random sample selection method. The data was collected from auditory verbal therapy centres in the Twin Cities of Hyderabad and Secunderabad, Andhra Pradesh. A demographic data form was used to obtain details about the age of the mothers, educational status of mothers, occupational status of mothers, age of children, gender of children, age at which children were identified with hearing loss, age at which children were implanted with cochlear implants, age at which children started education.

**Tool**

A questionnaire titled *Scale of Parental needs in transition to School* developed by Kargin, Baydik and Akcamete (2004) was adapted in Telugu for the study. The questionnaire was modified to match the geographical and cultural variations. The scale consists of twenty four statements and three response alternatives to each statements; YES, NOT SURE and NO. (Appendix 1)

**Reliability & Validity**

The modified questionnaire was shared with 15 experienced Special Educators and Audiologists for review and validation. Inter judge reliability was checked and the reliability co-efficient was found to be 0.93. The total item correlation for 24 items in the scale was greater than 0.45. In addition, an alpha-coefficient was calculated to determine inner consistency of the scale, and alpha value for the scale was determined to be 0.95. The factor analysis was performed to determine structural validity of the scale and the factor loadings of items were 0.46 to 0.83. Results of reliability and validity suggest that the psychometric properties of the scale are sufficient to support its use to determine parental needs in transition to school. Hence, it was decided the scale would consist of 24 items as was in the original scale and used for testing.

**Procedure**

The questionnaire was administered to thirty five mothers of children with hearing impaired using cochlear implants. A single interviewer explained the questionnaire, obtained consent and administered the questionnaire. The time taken for administration was 45 minutes. Parental responses to the questionnaire were obtained as Yes, Not sure and No which were converted to scores of 2, 1 and 0. Parental responses to the statements of the *Scale of Parental Needs in Transition to School* were analyzed by using arithmetical means and percentages. Furthermore, student's t-test was used to determine if parental needs were affected by educational status of the mothers, socio economic status of the family and age of the mothers. Analysis of variance (ANOVA) was used to determine if parental needs varied according to the age of the mothers of children using cochlear implants.

**Results**

Arithmetical means and percentile values of the collected data were analyzed to determine the parental needs in transition to kindergarten. Table 2 and Figure 1 shows the mean and percentile values of the needs expressed by parents. As shown in the table the mothers expressed needs for all items on the scale. The highest percentage and item mean score was 91.42% (mean 1.08) for item of *I need information about my legal rights regarding my child's acceptance to school and lowest score* was 42.85% (mean 1.97) for the item *I need information about the schools that my child can attend*. Scores between 80 - 89% were obtained for items 6, 15, 18 and for items 1, 4, 5, 7, 11, 12, 16, 21, 23 and 24 scores were between 70-79%, for other statements scores were between 69 – 50% indicating that overall 75% of parents expressed need for information for their children's transition to school.

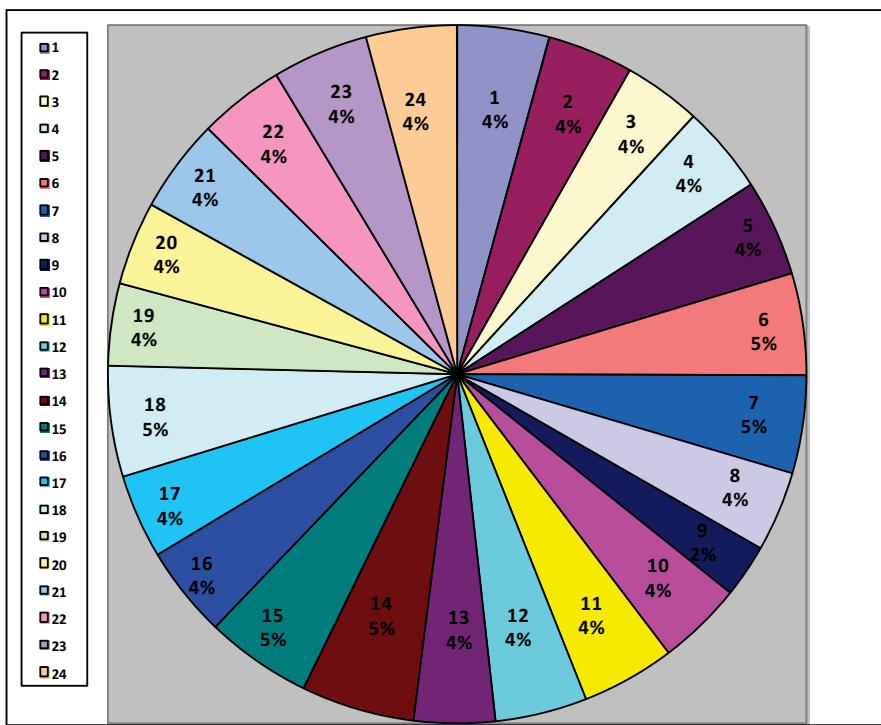
The findings of this study are in accordance with the results of Kargin et al., (2004) and Hanline (1988) who concluded that parents need information about relevant services and legal arrangements. It can be noticed from the above table that parents of children using cochlear implants needed information in all the areas on parental scale which may be attributed to the fact that the parents are more inquisitive about their child's progress in school and are open to learn.

**Parents needs in transition with respect to various variables**

Furthermore, statistical analysis was done to determine if the level of parental needs varied according to educational status, age and socio economic status of the mothers of children using cochlear implants. To find the effect of education status of the mothers, the subjects were divided into two groups those who have studied graduation and above (Group A) and those who have not completed graduation (Group B) an independent t-test was used to compare their scores and find statistical significance. From the table 3 and figure 2, it can be seen that the mean value for mothers with education status above graduation is 84.2 and the mean value for mothers with education status below graduation is 71.7 and t-value is 0.22( $P<0.01$ ), it can be concluded that there is no significant difference in the need levels in terms of education level of mothers of children using cochlear implants suggesting that the need level is almost same for both higher educational status group and low educational status group which indicates that all the parents irrespective of their educational status are in a need to gather more information regarding their children's schooling.

**Table 2: Mean Scores and percentile values of needs of mothers on the Scale of Parental Needs in Transition (N= 94)**

<b>Item No.</b>	<b>Item</b>	<b>M % Score</b>
14	I need information about my legal rights regarding my child's acceptance to regular school	1.0891.42
18	I need know what I should do to introduce my child to the other children in the class.	1.1789.32
15	I need information about places that I could apply in case that my child would not be accepted by regular school.	1.1485.67
6	I need information on the rules that my child and I should observe when joining in school.	1.2282.35
7	I need to know what the school teachers and administrators would expect from me and my child.	1.3779.13
5	I need information about the similarities and differences between regular school and preschool.	1.3777.67
23	I need to know how I can solve my child's problems in cooperation with the school teachers.	1.3477.64
21	I need to know how I can give information about my child to other parents.	1.4 75.63
11	I need information about what I should be watching for during my observation to choose an appropriate school for my child.	1.3775.38
12	I need to know how I can help my child to get him/her ready for regular school.	1.4274.45
1	I need information regarding how well the primary school will meet the needs of my child.	1.4274.24
16	I need to know how I can inform the school teacher about the disability characteristics of my child.	1.4573.53
24	I need information about the persons and places in or out of school from which I can get information when my child experiences a problem.	1.4573.31
4	I want to know if my child's developmental level and skill are appropriate for joining in regular school.	1.3771.23
2	I need information on the developmental characteristics of other children at age of primary school.	1.5769.14
22	I need to know how I can meet with parents with similar circumstances to share our experiences.	1.4 69.12
10	I need to know how I can establish contact with schools available for my child and visit them to observe.	1.4 68.54
17	I need to know how I can communicate my expectations from him/her to the school teacher	1.4268.27
20	I need to know if my child would need special education while she is attending regular school.	1.8867.54
19	I need to know what I should do to provide a cooperation between the special education teacher and regular school teacher.	1.5766.32
13	I need to know what information I should provide to school administration during my child's enrollment.	1.6865.43
8	I need information about where my child could be evaluate to determine if he / she will attend school	1.6264.76
3	I need to know what my child will be taught in school.	1.4 62.56
9	I need information about schools that my child can attend	1.9742.85

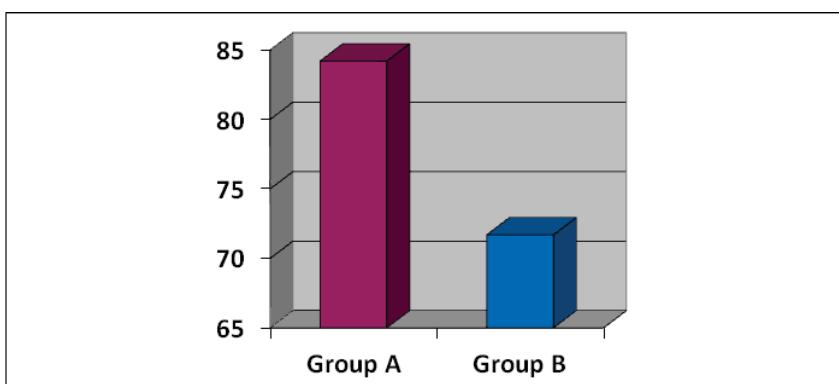


**Figure 1: Percentage of Responses for each statement by mothers on the Scale of Parental Needs in Transition to school (N= 94)**

**Table 3:**  
**Mean, SD and t-values of the needs expressed by parents as per educational status of mothers.**

Group	Mean	SD	T values
Group A (above graduation)	84.2	5.30	0.22**
Group B(below graduation)	71.7	1.70	

Note: \*P < 0.05      \*\* P < 0.01



Group A = Mothers whose educational status is above Graduation, Group B= Mothers whose educational status is below Graduation

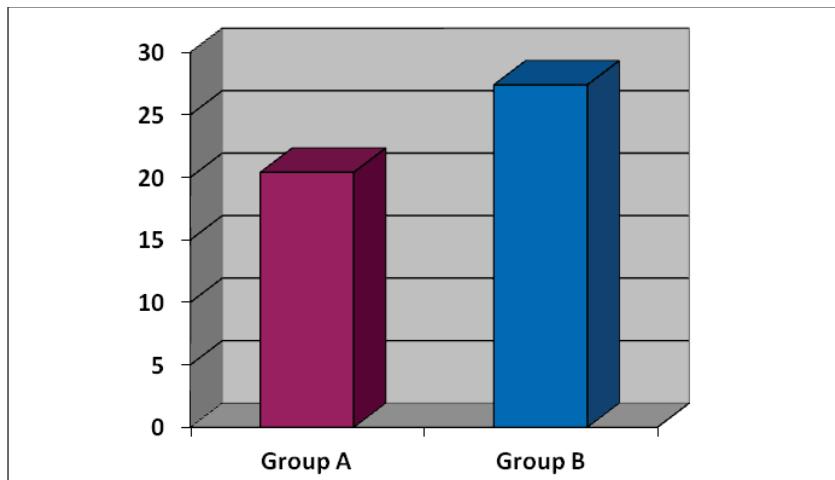
**Figure 2: Mean values of the transitional needs expressed by mothers of Group A & B as per educational status.**

To evaluate the effect of socio economic status of the parents, t test was administered. The subjects were divided into two groups based on monthly income from all sources, Group A (low socio economic group -whose monthly income is less than Rs 6500/-) and Group B (high socio economic group- whose monthly income is greater than Rs 6500/-). The mean values of group A (whose monthly income is less than Rs 6500/-) was 74.0 and group B (whose monthly income is greater than Rs 6500/-) was 87.0 respectively. From the table 4 and figure 3, it can be seen that there was no statistically significant difference between low socio economic group and high socio economic group with t-value being 0.065( $p<0.01$ ) suggesting that the need level is same for high socio economic group and low socio economic group. This shows that all the parents irrespective of their socio-economic status are enthusiastic to get more information about their children's education.

**Table 4: Mean, SD and t-value of the needs expressed by parents as per the socio-economic status of mothers.**

Group	Mean	SD	T values
Group A less than Rs 6500/-	74.0	1.3	0.065**
Group B greater than Rs 6500/-	87.0	2.8	

Note: \* $P < 0.05$     \*\*  $P < 0.01$



Group A = Mothers with low socioeconomic status, Group B= Mothers with high socioeconomic status

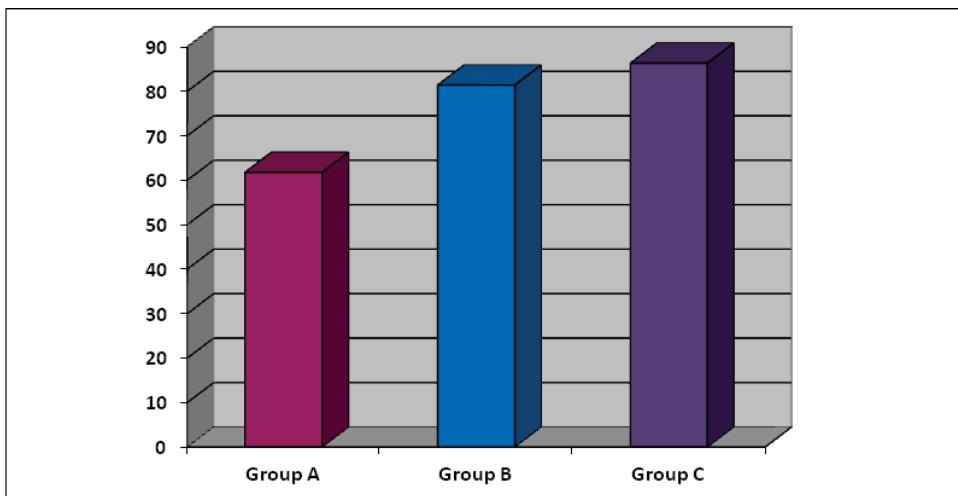
**Figure 3: Mean values of the transitional needs expressed by mothers of Group A & B as per the socio-economic status.**

To study the effect of age of mothers on the need for information on transition, the mothers were divided into three groups; group A (25 years and younger), group B (26 -30 yrs) and group C (31-35 years). The mean, standard deviation was computed and one way ANOVA was administered to find the statistical significance between groups. Mean value of group A was 61.80, group B was 81.42 and group C was 86.33 with an F value of 12.76, thus showing a statistically significant difference in terms of needs of mothers for transition between the three age ranges as shown in table 5 and figure 4 and it can also be noted that mothers within the age range of 31-35 years are more interested in getting information on the needs for transition to inclusive school than the mothers of age ranges of 25 years and younger and 26-30 years. Hence, results indicate that as the mother's age increases need to know the information regarding transition also increases.

**Table 5: Mean, SD and F value of the needs expressed by mothers as per their age.**

	Mean	Standard Deviation	F value	Significant value
Group A(25yrs & <)	61.80	11.57		
Group B(26-30yrs)	81.42	6.29	12.76	0.05
Group C(31-35 yrs)	86.33	6.02		

Note: \*P &lt; 0.05    \*\* P &lt; 0.01



Group A = Mothers in age range of 25 yrs & younger, Group B= Mothers in the age range of 26 -30yrs, Group C= Mothers in the age range of 31 -35yrs

**Figure 4: Mean value of the transitional needs expressed by mothers of Group A, B & C as per their age.**

### Discussion

The results of the current study indicate the importance of necessary information that the parents need to have during the transition to school from pre-school of their child with hearing impairment using cochlear implants. The findings of the study are similar to the findings of Fowler et al., (1991), Rous et al., (1994) and Kargin et al., (2004), who concluded that parents need information about relevant services and legal arrangements. Results of this study indicated that most of the mothers of children with hearing impairment using cochlear implants needed information in all areas of transition to school which could be explained by the fact that the focus of education programs on children with hearing impairment in India is low on parental needs and hence, emphasis should be placed on adopting an approach to provide parental information on needs for successful transition process in India.

The results also indicate that socio economic status of the parents (mothers) and the education levels of the mothers do not have a significant effect however; age of the mothers has a significant effect on parental need for information during transition to school. It is noticed that need level is high in families from high socio economic group and higher educational status group who are more open to acquiring information and have wider scope for exploration. This is in accordance with the results of Teale and Elizabeth (1986) which stated that high education levels and the high economic backgrounds of parents largely contributes to the home environment that they provide to their children. Therefore, it can be concluded that parents are one of the most influential yet significantly underrated factors in their children's education, and society should encourage more parental participation in education.

### Conclusion

Parents play an integral part in the lives of their children with disability and success in transition is less likely without their participation. Parents have a significant role to play in assuring that the rights mandated by law are provided to their children at school and the severity of the child's disability will influence the degree of advocacy the parent needs to assume. Parents must be provided with the

necessary support, training and skills required that will empower them to serve as advocates for their children.

The results of the study indicated that most of the parents of children with cochlear implants in India needed information related to transition from preschool to school. The professionals working with children with CI typically focus their attention on the rehabilitation of the children rather than their parents and family as a whole. It is important however, for them also to consider the children's parents especially mothers as a significant element of the CI rehabilitation process which will ultimately help the mothers to provide for and support their children's needs. The professionals should also focus on helping parents to identify, locate the supports that facilitate them to succeed in maintaining their child's health, education, identification of barriers and assistance with managing them, offer appropriate personal counseling to them on an intermittent or ongoing basis as identified by themselves, assists them in establishing connections with others in similar situations such as peer support groups.

It is important that professionals who work with these families need to be educated to understand the struggles that these mothers face. In particular, they need to understand how to recognize emotional needs with regard to recurring grief. Professionals also need to determine effective ways to support communication and to develop skills so that they may support the process of personal transformation within the mothers'. Finally; it is incumbent upon the professionals who work with these families to advocate for policy changes relevant to meeting the needs of mothers. Moreover information in transition should be given to parents as a legal right in Andhra Pradesh, India.

Research needs to be conducted that investigates the effectiveness of parents serving as their child's advocate. At present, there is a lack of research that links specific transitional program interventions with any particular outcomes. There are designs that look at co relational relationships but few confirmatory studies. The challenge remains to develop programs that encourage the participation of parents of children with disability, provide them support and treat them as equal members in the transitional intervention plans of their children. The transition to school is likely to be improved, therefore, by the appropriate quantity and content of information flow to parents and their children. Increased participation of the parents can only enhance the success of children with disability in obtaining the services they need and making the transition successful.

#### *Acknowledgements*

The authors sincerely thank Prof.R.Rangasayee, Director, Dr.Geeta Mukundan, Deputy Director, the Academic Committee members of AYJNHH for their support. We express our thanks to all the mothers of children with hearing impairment who participated in this study, without whose cooperation, the study would not have been possible. A special thanks to all the Headmasters and Teachers from Govt. and Private Schools in Twin Cities of Hyderabad and Secunderabad for extending their cooperation and helping us carry out the study in their respective schools. Last but not the least; it is our proud privilege to thank all our colleagues for their direct or indirect support and suggestions extended in the completion of this study.

#### **Appendix 1 The Scale of Parental Needs in Transition to School**

	<b>Item</b>	<b>Name:</b>	<b>Age:</b>	<b>Name of the Child:</b>	<b>Age of Child:</b>	<b>Yes</b>	<b>Not sure</b>	<b>No</b>
1	I need information regarding how well the school will meet the needs of my child.							
2	I need information on the developmental characteristics of other children at age of School.							
3	I need to know what my child will be taught							
1.	I want to know if my child's developmental level and skill are appropriate for School.							
5	I need information about the similarities and differences between School and preschool.							
6	I need information on the rules that my child and I should observe.							
7	I need to know what the School teacher and administrators would expect from me and my child.							

8	I need information about where my child could be evaluated to determine if s/he will attend School.		
9	I need information about Schools that my child can attend.		
10	I need to know how I can establish contact with Schools available for my child and visit them to observe.		
11	I need information about what I should be watching for during my observation to choose the School for my child.		
12	I need to know how I can help my child to get him/her ready for School.		
13	I need to know what information I should provide to School administration during my child's enrollment.		
14	I need information about my legal rights regarding my child's acceptance to School		
15	I need information about places that I could apply in case that my child would not be accepted by School.		
16	I need to know how I can inform the School teacher about the disability and characteristics of my child.		
17	I need to know how I can communicate my expectations from him/her to the School teacher		
18	I need to know what I should do to introduce my child to the other children in the class.		
19	I need to know what I should do to provide cooperation between the special education teacher and School teacher.		
20	I need to know if my child would need special education while she is attending a School.		
21	I need to know how I can give information about my child to other parents.		
22	I need to know how I can meet with parents with similar circumstances to share our experiences.		
23	I need to know how I can solve my child's problems in cooperation with the School teachers.		
24	I need information about the persons and places in or out of school from which I can get information when my child experiences a problem		

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